Fig. 1

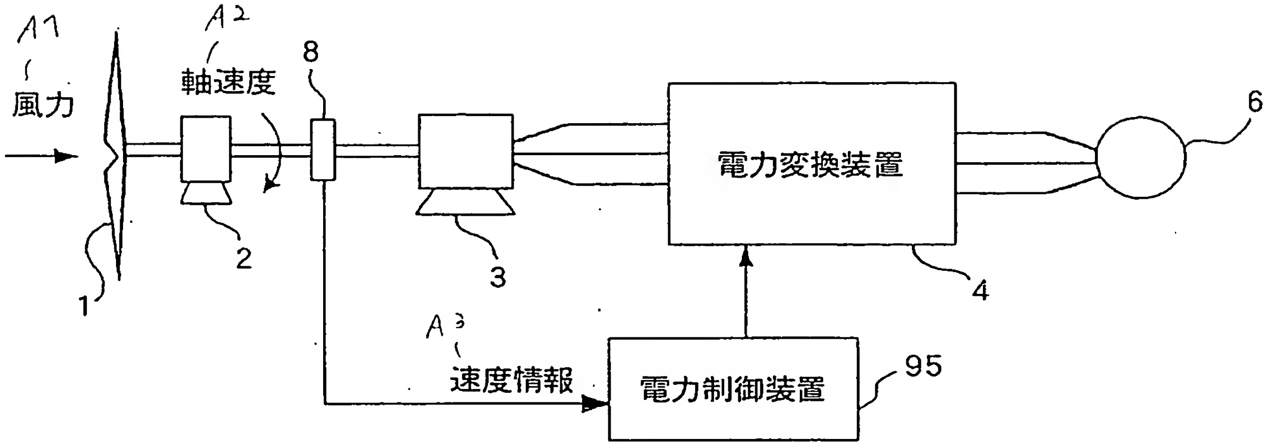
A1
風力
A2
軸速度
8
6
電力変換装置
1
2
3
4
A3
速度情報
電力制御装置
95

Fig. 2

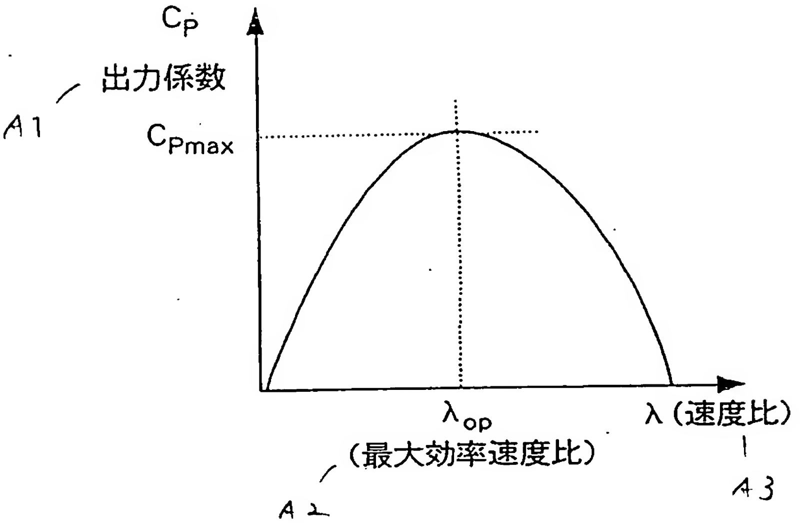
C_P
出力係数
A1
C_{Pmax}
λ_{op}
（最大効率速度比）
A2
λ（速度比）
A3

Fig. 3

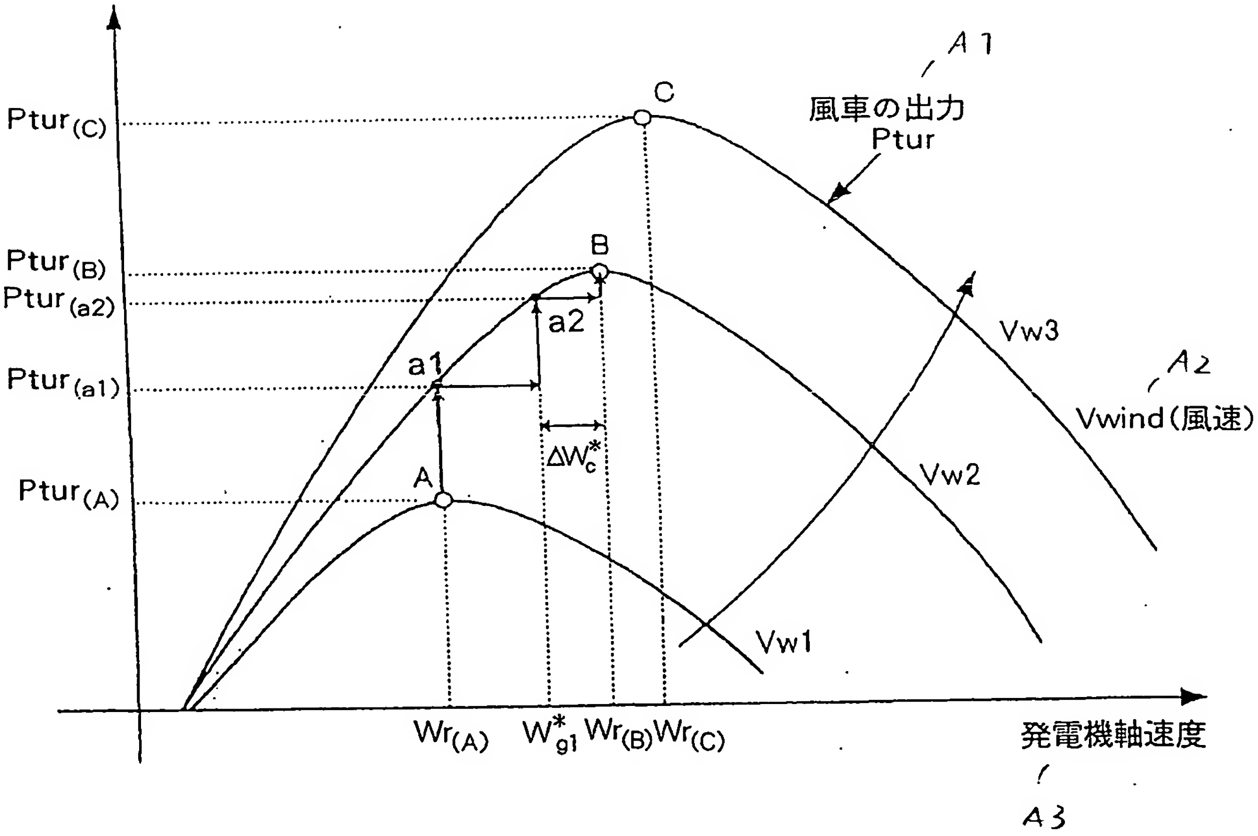
A1
風車の出力
Ptur
C
$Ptur_{(C)}$
B
$Ptur_{(B)}$
$Ptur_{(a2)}$
a2
a1
$Ptur_{(a1)}$
ΔW_c^*
A
$Ptur_{(A)}$
Vw3
A2
Vwind(風速)
Vw2
Vw1
$Wr_{(A)}$
W_{g1}^*
$Wr_{(B)}$
$Wr_{(C)}$
発電機軸速度
A3

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Fig. 4

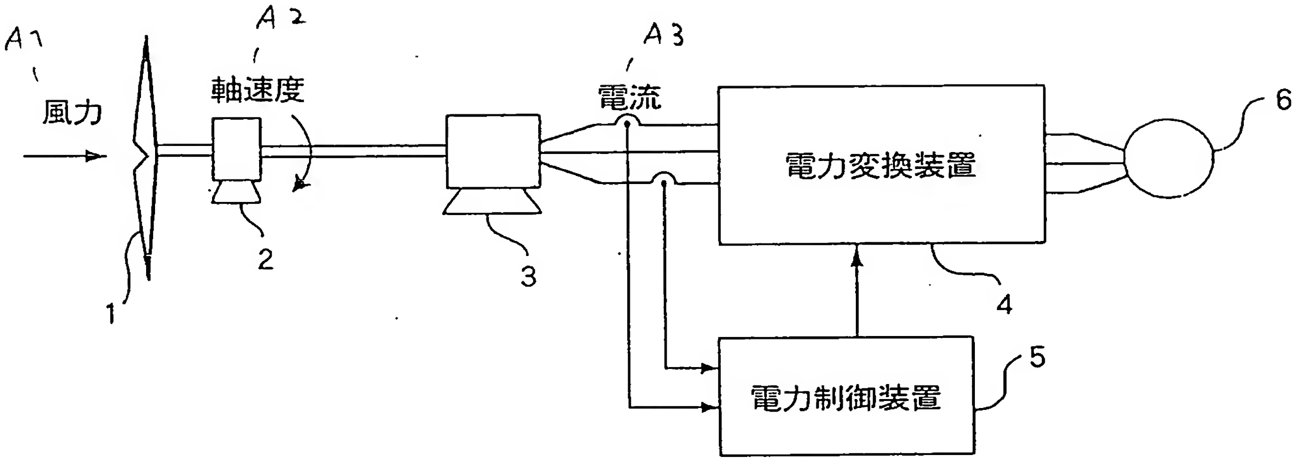
A1
風力
A2
軸速度
A3
電流
電力変換装置
電力制御装置
1
2
3
4
5
6

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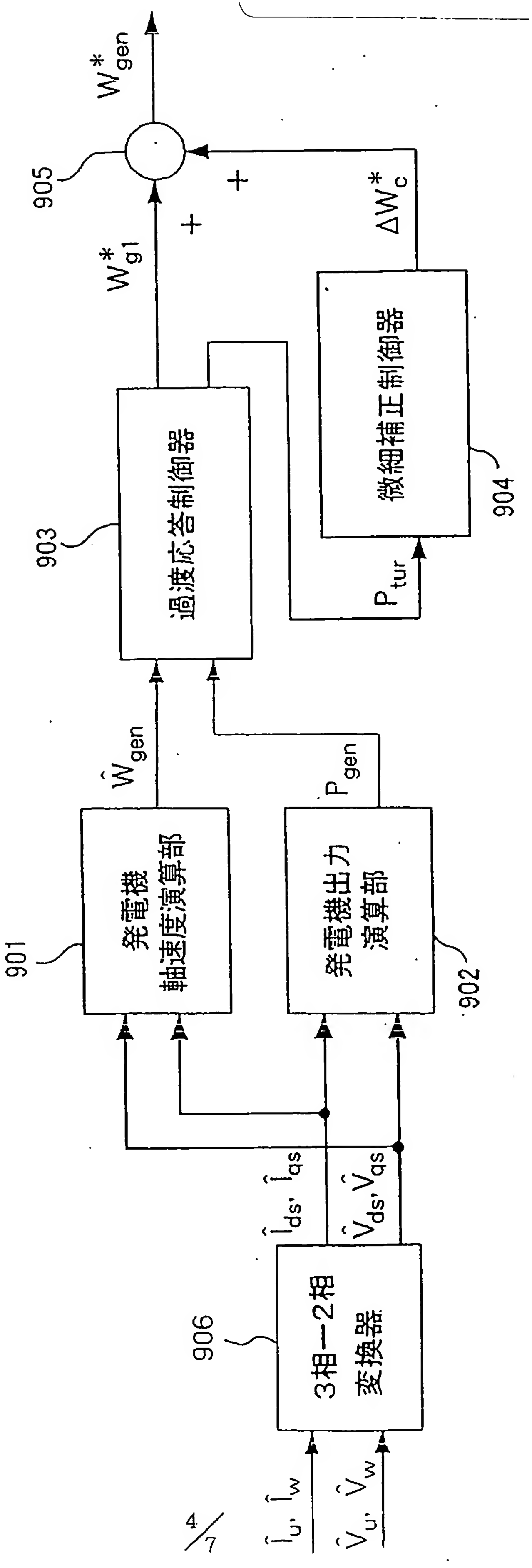
Fig. 5



$\hat{i}_u, \hat{i}_w$
$\hat{V}_u, \hat{V}_w$
906
3相―2相
変換器
$\hat{i}_{ds}, \hat{i}_{qs}$
$\hat{V}_{ds}, \hat{V}_{qs}$
901
発電機
軸速度演算部
902
発電機出力
演算部
$\hat{W}_{gen}$
P_{gen}
903
過渡応答制御器
P_{tur}
904
微細補正制御器
W^*_{g1}
ΔW^*_c
+
+
905
W^*_{gen}

Fig. 6

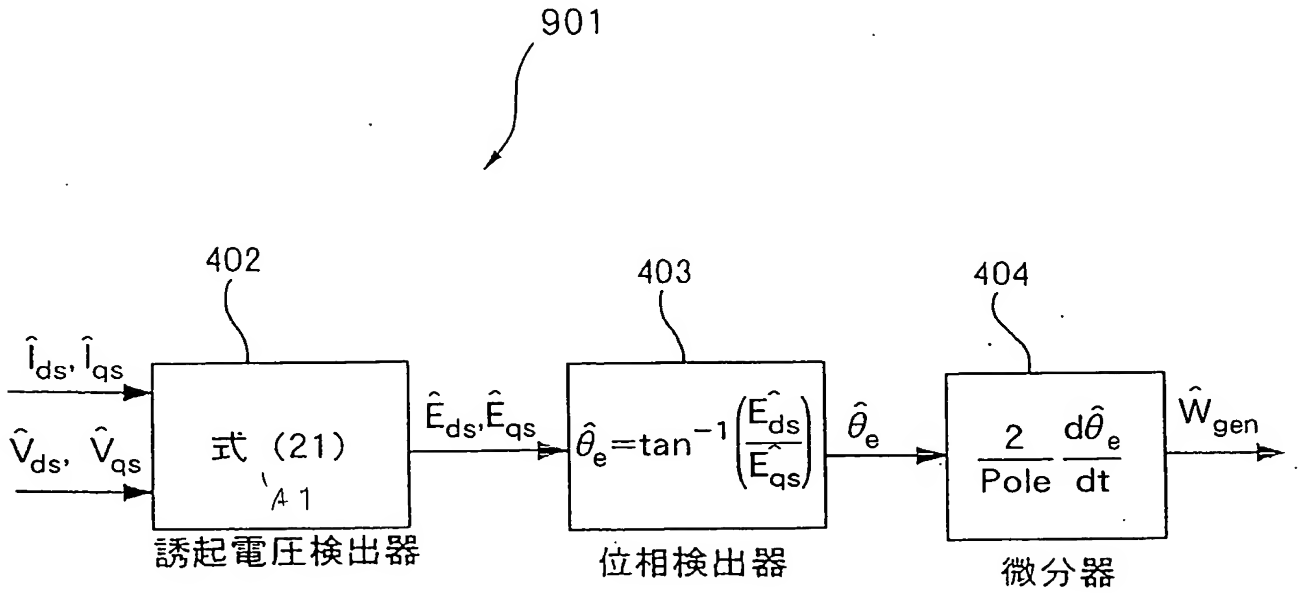

901
402
403
404
$\hat{I}_{ds}, \hat{I}_{qs}$
$\hat{V}_{ds}, \hat{V}_{qs}$
式（21）
A1
誘起電圧検出器
$\hat{E}_{ds}, \hat{E}_{qs}$
$\hat{\theta}_e = \tan^{-1}\left(\frac{\hat{E}_{ds}}{\hat{E}_{qs}}\right)$
位相検出器
$\hat{\theta}_e$
$\frac{2}{Pole}\frac{d\hat{\theta}_e}{dt}$
微分器
$\hat{W}_{gen}$

Fig. 7

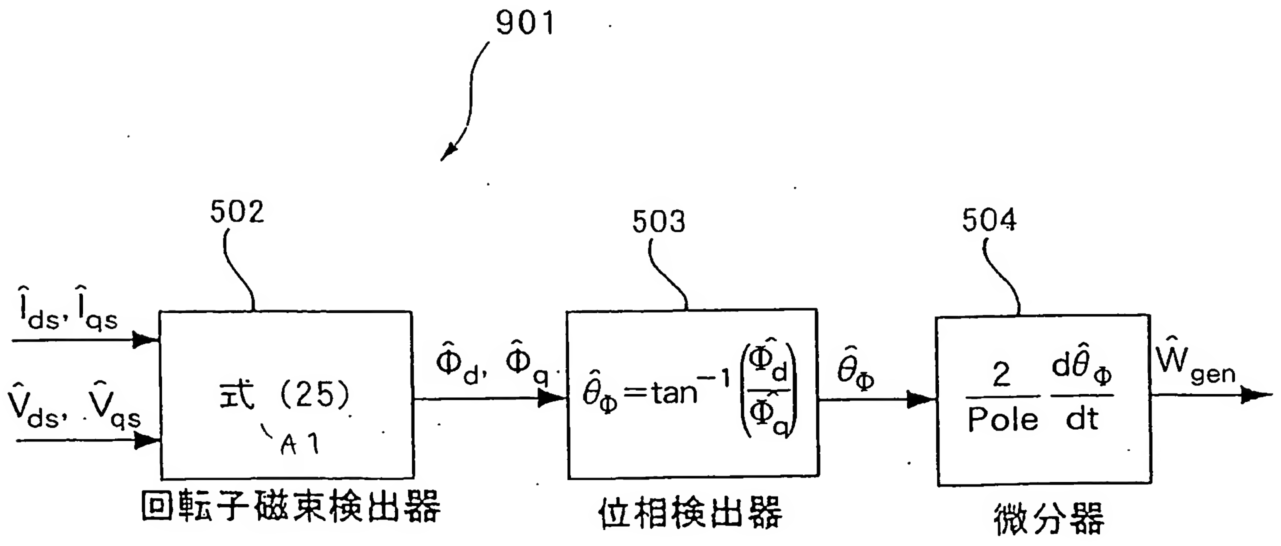

901
502
503
504
$\hat{I}_{ds}, \hat{I}_{qs}$
$\hat{V}_{ds}, \hat{V}_{qs}$
式（25）
A1
回転子磁束検出器
$\hat{\Phi}_d, \hat{\Phi}_q$
$\hat{\theta}_\Phi = \tan^{-1}\left(\frac{\hat{\Phi}_d}{\hat{\Phi}_q}\right)$
位相検出器
$\hat{\theta}_\Phi$
$\frac{2}{Pole}\frac{d\hat{\theta}_\Phi}{dt}$
微分器
$\hat{W}_{gen}$

Fig. 8

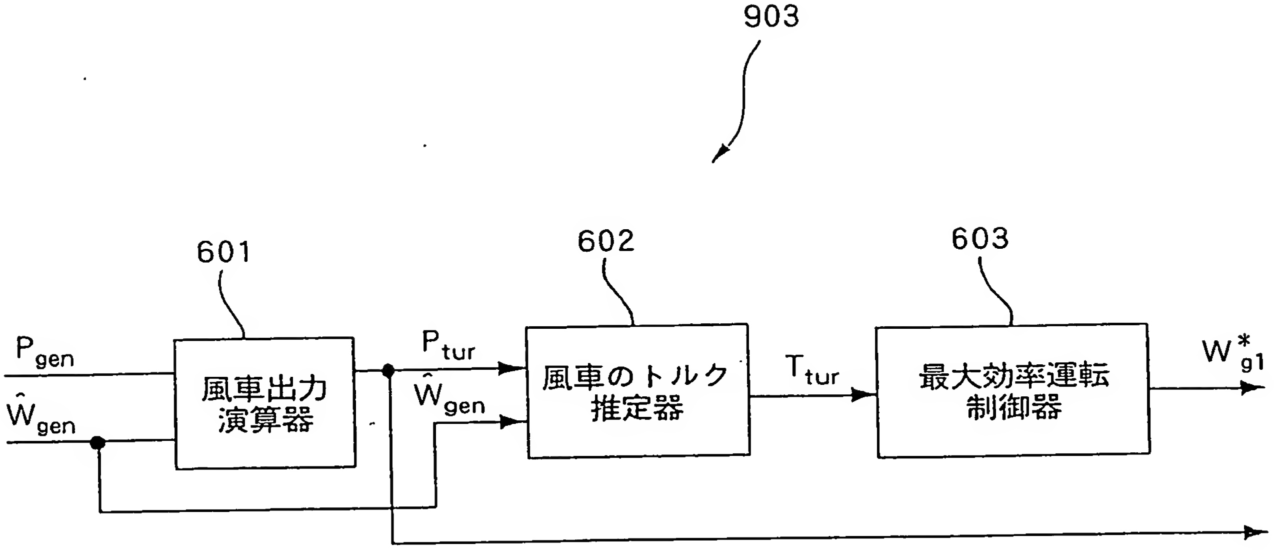

903
601
602
603
P_{gen}
$\hat{W}_{gen}$
風車出力演算器
P_{tur}
$\hat{W}_{gen}$
風車のトルク推定器
T_{tur}
最大効率運転制御器
W^*_{g1}

Fig. 9

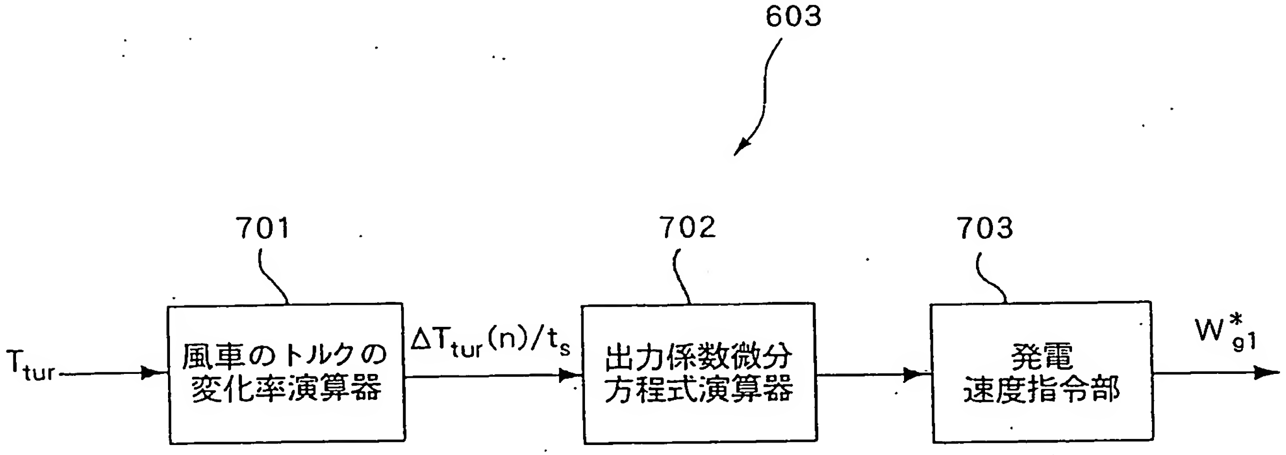

603
701
702
703
T_{tur}
風車のトルクの変化率演算器
$\Delta T_{tur}(n)/t_s$
出力係数微分方程式演算器
発電速度指令部
W^*_{g1}

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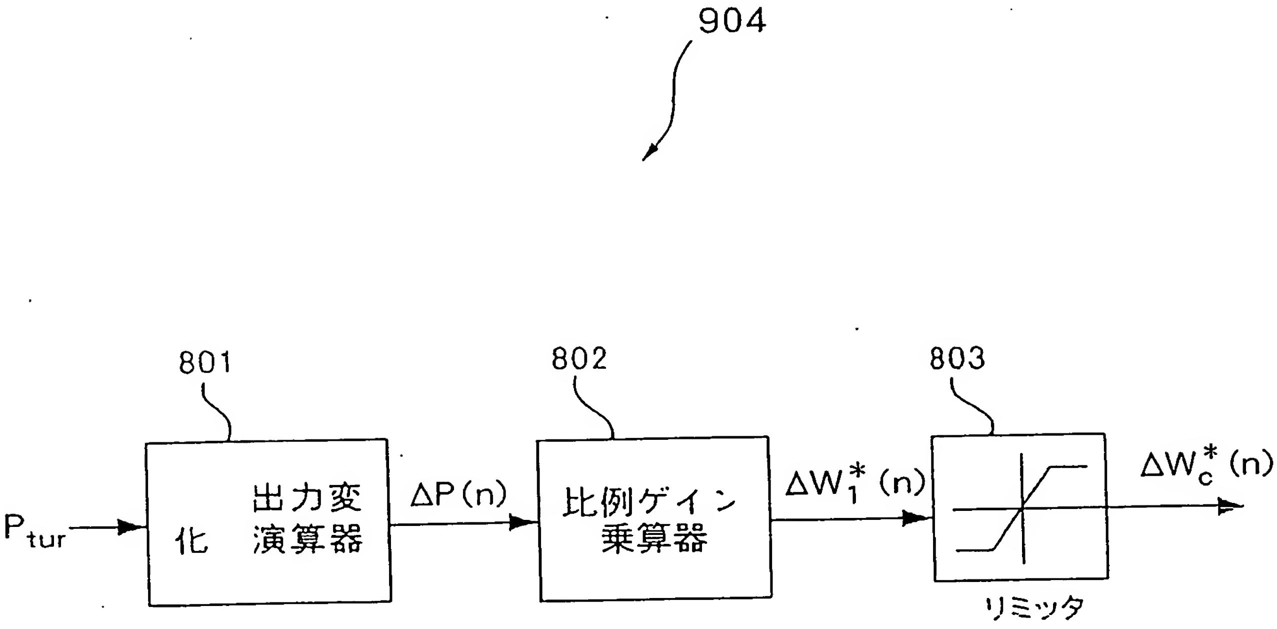
Fig. 10


904
801
802
803
P_{tur}
出力変化演算器
$\Delta P(n)$
比例ゲイン乗算器
$\Delta W_1^*(n)$
$\Delta W_c^*(n)$
リミッタ

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[Fig. 1]

4: POWER CONVERTER

95: POWER CONTROLLER

A1: Wind POWER

A2: SHAFT SPEED

A3: SPEED INFORMATION

[Fig. 2]

A1: OUTPUT COEFFICIENT

A2: (MAXIMUM-EFFICIENCY SPEED RATIO)

A3: (SPEED RATIO)

[Fig. 3]

A1: WINDMILL OUTPUT P_{tur}

A2: Vwind (WIND SPEED)

A3: GENERATOR SHAFT SPEED

[Fig. 4]

4: POWER CONVERTER

5: POWER CONTROLLER

A1: WIND POWER

A2: SHAFT SPEED

A3: CURRENT

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[Fig. 5]

901: GENERATOR SHAFT SPEED CALCULATOR

902: GENERATOR OUTPUT CALCULATOR

903: TRANSIENT RESPONSE CONTROLLER

906: THREE-TWO PHASE CONVERTER

[Fig. 6]

402: INDUCED VOLTAGE DETECTOR

403: PHASE DETECTOR

404: DIFFERENTIATOR

A1: EQUATION 21

[Fig. 7]

502: ROTOR MAGNETIC-FLUX DETECTOR

503: PHASE DETECTOR

504: DIFFERENTIATOR

A1: EQUATION 25

[Fig. 8]

601: WINDMILL OUTPUT CALCULATOR

602: WINDMILL TORQUE ESTIMATOR

603: MAXIMUM-EFFICIENCY OPERATION CONTROLLER

[Fig. 9]

701: WINDMILL TORQUE VARIATION CALCULATOR

702: OUTPUT-COEFFICIENT DIFFERENTIAL EQUATION CALCULATOR

703: GENERATION RATE INSTRUCTION UNIT

[Fig. 10]

801: OUTPUT VARIATION CALCULATOR

802: PROPORTIONAL GAIN MULTIPLIER

803: LIMITER